

Amendment

Applicant: Michael James Turner

Serial No.: 10/614,973

Filed: July 8, 2003

Docket No.: K315.128.101

Title: STARTING OF SWITCHED RELUCTANCE GENERATORS

Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A switched reluctance machine generator comprising a rotor having a plurality of rotor poles, a stator having a plurality of stator poles, at least one phase winding for exciting two or more of the poles, and a priming winding to excite two or more of the poles, and a priming power source separate from that used to excite the phase windings, wherein the priming power source is operably connected to the priming winding.
2. (Currently Amended) A switched reluctance machine generator according to claim 1 wherein the priming winding is energized while the rotor is being driven~~connectable to a priming power source separate from that used to excite the phase windings.~~
3. (Currently Amended) A switched reluctance machine generator according to claim 1 wherein the priming power source excites the priming winding independently of rotor position~~machine is a switched reluctance machine.~~
4. (Currently Amended) A switched reluctance machine generator according to claim 1 wherein the at least one phase winding is provided on the stator poles.
5. (Currently Amended) A switched reluctance machine generator according to claim 1

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wherein the priming winding is provided on the stator.

6. (Currently Amended) A switched reluctance machine-generator according to claim 5 wherein the priming winding extends along a longitudinal axis of the stator.

7. (Currently Amended) A switched reluctance machine-generator according to claim 5 wherein the priming winding is of a gramme-ring type, wound around a back iron part of the stator.

8. (Currently Amended) A switched reluctance machine-generator according to claim 5 wherein the priming winding is provided around at least one of the stator poles.

9. (Currently Amended) A switched reluctance machine-generator according to claim 1 wherein the at least one phase winding is excitable by a DC link, the ratio of the voltage of the DC link to the supply voltage for the priming winding being greater than 3.

10. (Currently Amended) A switched reluctance machine-generator according to claim 1 further comprising means for connecting the priming winding to ~~a~~the priming power source, the means for connecting comprising a switch, a chopper unit or a current controller.

11. (Currently Amended) A switched reluctance machine-generator according to claim 1 wherein the priming winding and/or its associated priming power source, and/or associated

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connecting components, are rated for short-term use.

12. (Currently Amended) A method of starting a switched reluctance generator comprising a rotor having a plurality of rotor poles and a stator having a plurality of stator poles, at least one phase winding defining one or more phases, and at least one priming winding, the method comprising;

driving the rotor relative to the stator;

while the rotor is being driven, energizing the priming winding by forming an electrical connection between the priming winding and a source of electrical energy to excite two or more of the poles and to cause time-varying flux linkage in at least one of the phase windings; and

subsequently de-energizing the priming winding and energizing the phase winding(s) of the generator.

13. (Original) A method according to claim 12 wherein the switched reluctance generator is connected to a DC link and further comprising de-energizing the priming winding once the voltage of the DC link has reached a pre-determined value and subsequently energizing the phase winding(s) of the generator from the DC link.

14. (Original) A method according to claim 13 in which the DC link has a DC capacitor connected across the phase winding(s), the method further comprising:

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charging the DC link capacitor by supplying current from the or each phase winding to the DC link capacitor and disconnecting the priming winding from the source once the voltage of the DC link capacitor has reached a pre-determined value.

15. (Currently Amended) A switched reluctance generator comprising a rotor having a plurality of rotor poles and a stator having a plurality of stator poles, at least one phase winding defining one or more phases, and at least one priming winding, the generator comprising;

means for driving the rotor relative to the stator;

means for energizing the priming winding, while the rotor is being driven, by forming an electrical connection between the priming winding and a source of electrical energy to excite two or more of the poles and to cause time-varying flux linkage in at least one of the phase windings; and

means for subsequently de-energizing the priming winding and energizing the phase winding(s) of the generator.

16. (Original) A switched reluctance generator according to claim 15 wherein the switched reluctance generator is connected to a DC link and further comprising means for de-energizing the priming winding once the voltage of the DC link has reached a pre-determined value and for subsequently energizing the phase winding(s) of the generator from the DC link.

17. (Original) A switched reluctance generator according to claim 16 wherein the DC link

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has a DC capacitor connected across the phase winding(s), the generator further comprising:

means for charging the DC link capacitor by supplying current from the or each phase winding to the DC link capacitor and for disconnecting the priming winding from the source once the voltage of the DC link capacitor has reached a pre-determined value.

18. (New) A switched reluctance generator comprising a rotor having a plurality of rotor poles, a stator having a plurality of stator poles and at least one phase winding arranged to be supplied from a DC link of a generator controller for exciting two or more of the poles and a priming winding arranged to excite two or more of the stator poles during a start procedure, thereby to establish a voltage of pre-determined value on the DC link.